Acronyms and Glossary for Northern Everglades Initiative

Acronyms and Abbreviations

A8	Acceler8
ac-ft	Acre-feet
AgNMPs	Agricultural Nutrient Management Plans
ASR	Aquifer Storage and Recovery
AWS	Alternative Water Supply
BAT	Best Available Technology
BMP	Best Management Practice
BODR	Basis of Design Report
C&SF Project	Central and Southern Florida Flood Control Project
CERP	Comprehensive Everglades Restoration Plan
cfs	Cubic feet per second
CRE	Caloosahatchee River and Estuary
District	South Florida Water Management District
EAA	Everglades Agricultural Area
EFA	Everglades Forever Act
ERP	Environmental Resource Permitting
EIS	Environmental Impact Statement
ET	Evapotranspiration
F.A.C.	Florida Administrative Code
FAV	Floating Aquatic Vegetation
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
F.S.	Florida Statute
GIS	Geographic Information Systems
ha	Hectares
HHD	Herbert Hoover Dike
Hg	Mercury
HRT	Hydraulic Residence (or retention) Time
IAP	Interim Action Plan
KBMOS	Kissimmee Basin Study Modeling and Operations Study
KCOL	Kissimmee Chain of Lakes (LTMP)
KOE	Kissimmee / Lake Okeechobee / Everglades System
KRHRP	Kissimmee River Headwaters Revitalization Project

KRREP	Kissimmee River Restoration Evaluation Program
KRRP	Kissimmee River Restoration Project
KRW	Kissimmee River Watershed
KUB	Upper Kissimmee Basin
LEC	Lower East Coast (regional water supply planning area)
LKB	Lower Kissimmee Basin
LMA	Lake Management Areas
LOCP	Lake Okeechobee Construction Project
LOER	Lake Okeechobee and Estuary Recovery Program
LOFT	Lake Okeechobee Fast Track Initiative
LOK	Lake Okeechobee
LOPA	Lake Okeechobee Protection Act (Chapter 00-130, Laws of Florida)
LOPP	Lake Okeechobee Protection Plan
LOW	Lake Okeechobee Watershed
LOWA	Lake Okeechobee Watershed Assessment (micro-basin monitoring)
LOWCP	Lake Okeechobee Watershed Construction Plan
LOWOD	Lake Okeechobee Works of the District (permitting program)
LTMP	(KCOL) Long Term Management Plan
MeHg	Methylmercury
MFLs	Minimum Flow and Levels
mgd	Million gallons per day
MM	Management Measure
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
msl	Mean Sea Level
mtons	Metric Tons
N	Nitrogen
NAVD	North American Vertical Datum
NEEPP	Northern Everglades and Estuaries Program (Legislative Mandate)
NEPA	National Environmental Policy Act
NETP	Northern Everglades Technical Plan
NERSM	Northern Everglades Regional Simulation Model
NGVD	National Geodetic Vertical Datum (formerly mean sea level)
P	Phosphorus
P2TP	Phase II Technical Plan
ppb	Parts per billion
PIR	Project Implementation Report
PLRG	Pollutant Loading Reduction Goal
PSTA	Periphyton-Based Stormwater Treatment Area
PWS	Public Water Supply
QA / QC	Quality Assurance / Quality Control

RSM	Regional Simulation Model
SAV	Submerged Aquatic Vegetation
SJRWMD	St. Johns River Water Management District
SFWMD	South Florida Water Management District
SFWMM	South Florida Water Management Model
SLE	St. Lucie Estuary
SOR	Save Our Rivers
STA	Stormwater Treatment Area
SWFWMD	Southwest Florida Water Management District
TDP	Total Dissolved Phosphorus
THg	Total Mercury
TN	Total Nitrogen
TP	Total Phosphorus
TS	Total Sulfur
TSP	Tentatively Selected Plan
TSS	Total Suspended Solids
TMDL	Total Maximum Daily Load
UKISS	Upper Kissimmee (model domain)
USACE	U.S. Army Corps of Engineers
VEC	Valued Ecosystem Component
WCAs	Water Conservation Areas
WQS	Water Quality Standard
WRDA	Water Resources Development Act
WRAC	Water Resources Advisory Commission

Units of Measure

Metric Unit	Symbol	U.S. Unit	U.S. Equivalent
meter	m	yard	1.094 yd
kilometer	km	mile	0.6216 mi
hectometer	H	none	328 ft
cubic meter	m^3	cubic yard	1.308 yd^3
square kilometer	km^2	square mile	0.386 sq mi
hectare	ha	acres	2.477 ac
cubic hectometer	hm^3	acre-foot	810.68 ac-ft
metric ton (1.000 kg)	mt	ton	2.205 lb

Definitions

Acceler8 - An expedited course of action for achieving Everglades restoration. The program consists of eight projects (some with multiple components) that, when completed, will provide immediate environmental, flood control and water supply benefits.

Acre-foot (ac-ft) – The volume of water required to cover one acre to a depth of one foot.

Aquifer – An underground, water-bearing layer of porous rock, sand or gravel.

Aquifer Storage and Recovery (ASR) – The injection of freshwater into a confined saline aquifer during times when supply exceeds demand (wet season) and recovering it during times when there is a supply deficit (dry season).

Baseline period - A specified period of time during which collected data are used for comparisons with subsequent data.

Benthic - Pertaining to the bottom or sediment habitats of a body of water.

Best Management Practices (BMPs) - Land, agricultural, industrial, and waste management techniques that reduce pollutant export from a specified area.

Bioaccumulation - An increase in concentration of a contaminant in an organism, relative to its concentration in the environment over time.

Biomass – The amount of living material in a particular sample, population or area, usually measured as dry mass.

Brackish – Containing a mixture of salt water and fresh water.

Central and Southern Florida Project (C&SF Project) - A complete system of canals, storage areas, and water control structures spanning the area from Lake Okeechobee to both the east and west coasts and from Orlando south to the Everglades. It was designed and constructed during the 1950s by the U.S. Army Corps of Engineers to provide flood control and improve navigation and recreation.

Compliance monitoring - In a water quality management program, compliance is associated with meeting permit conditions based on ambient standards. Ongoing monitoring provides periodic water quality data, which are used to assess compliance.

Comprehensive Everglades Restoration Plan (CERP) - The framework and guide for the restoration, protection, and preservation of the South Florida ecosystem. CERP also provides for water-related needs of the region, such as water supply and flood protection. Conductance: The ability of an aqueous solution to carry an electric current. Conductance is used as a measure of total dissolved solids in water.

Constraints - Restrictions that both define and limit the extent of the planning process and in some sense support and inform it.

Critical Restoration Projects - Seven projects determined to be critical to the restoration of the South Florida ecosystem, which were authorized in 1996, prior to CERP. These are comparatively small restoration projects undertaken by the USACE and the District, and are being implemented along with CERP projects.

Defining Characteristics of Pre-Drainage Everglades Ecosystem – Spatial extent, habitat heterogeneity and dynamic storage.

Discharge (or flow) - The rate of water movement past a reference point, measured as volume per unit time (usually expressed as cubic feet or cubic meters per second).

Drawdown - A lowering of the water level in a reservoir or other body of water.

Drought - A long period of abnormally low rainfall, especially one that adversely affects growing or living conditions.

Ecosystem - Biological communities together with their environment, functioning as a unit.

Estuary - The part of the wide lower course of a river where its current is met by ocean tides or an arm of the sea at the lower end of a river where fresh and salt water meet.

Eutrophic - An aquatic environment enriched with nutrients, usually associated with high plant productivity and low oxygen levels.

Evapotranspiration (ET) - The process by which water is released to the atmosphere by evaporation from a water surface or movement from a plant surface (more specifically known as transpiration).

Everglades Agricultural Area (EAA) - An area extending south from Lake Okeechobee to the northern levee of WCA-3A, from its eastern boundary at the L-8 canal to the western boundary along the L-1, L-2, and L-3 levees. The EAA incorporates almost 3,000 square kilometers (1,158 square miles) of highly productive agricultural land.

Everglades Forever Act (EFA) - A 1994 Florida law (Section 373.4592, Florida Statutes), amended in 2003, to promote Everglades restoration and protection. This will be achieved through comprehensive and innovative solutions to issues of water quality, water quantity, hydroperiod, and invasion of exotic species to the Everglades ecosystem. The EFA establishes the plan, the enforceable schedule, and the funding for the various components of the Everglades Program.

Existing Conditions Characterization – A process during which existing conditions in the study area are characterized by reviewing available data from previous studies, on-going projects and planned initiatives. Current and planned projects that will either contribute towards the achievement of objectives or can be directly integrated are also identified during this review.

Evaluation of Alternatives – Performance of each individual alternative plan is determined using agreed upon methodologies and modeling applications. Performance measures then are used to compare the performance of various plans to one another. A customized model application facilitates the alternative formulation and comparison. Alternatives are ranked according to their performance.

Fauna – All animal life associated with a given habitat.

Floating Aquatic Vegetation (FAV) – Wetland plants that have portions floating at or near the water surface but are rooted in substrate (for example, water lily).
Flora – All plant life associated with a given habitat.

Florida Statutes (F.S.) – A permanent collection of state laws organized by subject area into a code made up of titles, chapters, parts and sections, which is updated annually by laws that create, amend or repeal statutory material.

Formulation of Alternatives – A series of alternative plans are formulated by combining Management Measures. Each alternative is independently capable of achieving the stated project goals and objectives.

Hydraulic Residence (or Retention) Time (HRT) – The length of time that water resides in a specific area.

Hydrology - The scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

Hydropattern - Water depth, duration, timing, and distribution of fresh water in a specified area. A consistent hydropattern is critical for maintaining various ecological communities in wetlands.

Hydroperiod - Duration and frequency of inundation in a wetland area.

Identification of Problems and Opportunities – A process that gives focus to the planning effort and aids in the development of planning objectives. Water resources projects are generally planned and implemented to solve problems, meet challenges, and seize opportunities.

Impoundment - A reservoir used for retaining water.

Inflow - The act or process of flowing in or into.

Interagency Team – Federal, state, regional and local stakeholders from the public and private sectors whose collective efforts developed the philosophies and programs described in the Phase II Technical Plan for the Lake Okeechobee Watershed Construction Project.

Intrusion - The invasion of a body of fresh water by a body of salt water, due to its greater density. It can occur either in surface water or groundwater bodies. The term is applied to the flooding of freshwater marshes by sea water, the upward migration of sea water into rivers and navigation channels, and the movement of sea water into freshwater aquifers along coastal regions.

Invasive Exotic Species - Species of plants or animals that are not naturally found in a region (non-indigenous), which can aggressively invade habitats and cause multiple ecological changes including the displacement of native species.

Limnology – The scientific study of bodies of fresh water for their biological, physical and geological properties.

Littoral – The region of well-lit water close to shore. Home to most of the aquatic plant life (both rooted and floating) in a pond or lake because the high amount of sunlight reaching it allows for significant photosynthetic activity.

Loading (Mass Loading) - The amount of material carried by water into a specified area, expressed as mass per unit of time (for example, phosphorus loading into Lake Okeechobee as metric tons per year).

Management Measures (MMs) – Building blocks of alternative plans. Using pre-determined criteria, MMs are screened to eliminate features or activities that do not contribute to meeting the planning goals and objectives.

Marsh – An area of soft, wet, low-lying land, characterized by grassy vegetation and often forming a transition zone between water and land.

Median – The middle value in a set of ordered data. The median is used often to express the typical (average) value of a group of water quality data, because the median is less influenced than the arithmetic average by outlying values routinely seen in such data.

Minimum Flows and Levels (MFLs) – Florida Law (Chapter 373, Florida Statutes) Requires the state's water management districts to set water levels for each major body of water "… at which further withdrawals would be significantly harmful to the water resources or ecology of the area."

Muck – Dark, organic soil derived from well-decomposed plant biomass.

Northern Everglades and Estuaries Protection Program (NEEPP) – In Senate Bill 392, collectively, development of the Phase II Technical Plan for the Lake Okeechobee Watershed Construction Project by February 2008, and of watershed protection plans for the St. Lucie and Caloosahatchee estuaries by January 2009. The NEEP covers the entire Lake Okeechobee Watershed, the watersheds of the St. Lucie and Caloosahatchee estuaries, Lake Okeechobee and certain areas to the south of Lake Okeechobee.

Northern Everglades Regional Simulation Model (NERSM) – An implementation of the Regional Simulation Model (RSM) covering the northern extent of the District down to Lake Okeechobee. NERSM is the initial hydrologic modeling tool to identify and screen alternatives for the Northern Everglades Initiative. Sub-watersheds will be simulated and performance measures will be presented; sub-watershed budget information is the primary output.

Nutrients – Organic or inorganic compounds essential for the survival of an organism. In aquatic environments, nitrogen and phosphorus are important nutrients that affect the growth rate of plants.

Opportunity - In the context of planning, an opportunity offers a chance for progress or improvement. [Compare with Problem]

Outflow – The act or process of flowing out of.

Parts per billion (ppb) - A unit of measure, equivalent to micrograms per liter (1 ppb = 1 μg/L).

Performance Measures or Evaluation Criteria - Benchmarks that are used to guide formulation of alternative plans and evaluate plan performance.

Periphyton - The biological community of microscopic plants and animals attached to surfaces in aquatic environments. Algae are the primary component in these assemblages, which naturally reduce phosphorus levels in water and serve a key function in Stormwater Treatment Areas.

pH - A measure of the concentration of hydrogen ions in a solution.

Phosphorus (P) - An element that is essential for life. In freshwater aquatic environments, phosphorus is often in short supply; increased levels can promote the growth of algae and other plants.

Photosynthesis - The process in green plants and certain other organisms by which carbohydrates are synthesized from carbon dioxide and water using light as an energy source.

Planning Objectives - Statements of what a plan is attempting to achieve, and to communicate to others the intended purpose of the planning process. Planning objectives

are intended to solve the identified problems and take advantage of recognized opportunities.

Pollutant Loading - Influx of a chemical or nutrient that contaminates air, soil, or water.

Problem - In the context of planning, a problem can be thought of as an undesirable condition. [Contrast with Opportunity]

Quality assurance (QA) - A program to provide a means for a product to meet a defined set of quality standards at a specific level of confidence.

Quality control (QC) - Steps taken to ensure that quality standards are met.

Recommended Plan – The highest ranking alternative is selected as the recommended Phase II Technical Plan. Planning level budget estimates, an implementation schedule, and an adaptive management plan are then developed for the recommended plan. Funding needs and opportunities are identified. Process development and engineering is likely to be needed to finalize the details of the individual components of the recommended plan.

Reservoir - A man-made or natural water body used for water storage.

Riverine - Located on or inhabiting the banks of a river.

Salinity - Of or relating to chemical salts (usually measured in parts per thousand, or ppt).

Scientifically Defensible - Information that is supportable using accepted scientific methods of data collection, analysis, and reporting.

Slough - A depression associated with swamps and marshlands as part of a bayou, inlet or backwater; it contains areas of slightly deeper water and a slow current and can be thought of as the broad, shallow rivers of the Everglades.

Species richness - The number of species occurring in a particular area for a specified sampling period.

Stage - The height of a water surface above an established reference point (datum or elevation).

Stormwater Treatment Area (STA) - A large, constructed wetland designed to remove pollutants, particularly nutrients, from stormwater runoff using natural processes.

Structure – Human-constructed pump stations, reservoirs, channel improvements canals, levees, and diversion channels.

Submerged aquatic vegetation (SAV) - Wetland plants that exist completely below the water surface.

Total Maximum Daily Load (TMDL) - A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

Tributary - A stream that flows into a larger stream or other body of water.

Water Quality (WQ) Criteria - Constituent concentrations based on scientific data and judgments on the relationship between pollutant concentrations and environmental and human health effects.

Water Quality Standards (WQS) - State-mandated water quality levels that are comprised of a beneficial use classification, water quality criteria applicable to that classification, Florida anti-degradation policy, and several provisions in other rules.

Watershed - A region or area bounded peripherally by a water parting and draining ultimately to a particular watercourse or body of water.

Wetland - An area that is inundated or saturated by surface water or groundwater with vegetation adapted for life under those soil conditions (for example, swamps, bogs, and marshes).

Legislation

The Lake Okeechobee Protection Act (LOPA, Chapter 00-130, Laws of Florida), which was passed by the legislature in 2000, established a restoration and protection program for Lake Okeechobee. This was to be accomplished by achieving and maintaining compliance with State water quality standards in Lake Okeechobee and its tributary waters through a watershed-based, phased, comprehensive and innovative protection program. This program was designed to reduce phosphorus (P) loads and implement long-term solutions, based upon the Lake's P Total Maximum Daily Load (TMDL) and considering the establishment of TMDLs for the tributaries of Lake Okeechobee. The overall objective of LOPA is to meet the Lake Okeechobee total P TMDL of 140 metric tons by 2015.

The LOPA includes development and implementation of programs including:

- Lake Okeechobee Protection Plan (LOPP)
- Lake Okeechobee Watershed Construction Project (LOWCP), Phases I and II
- Lake Okeechobee Watershed P Source Control Program
- Lake Okeechobee Research and Water Quality Monitoring Program
- Lake Okeechobee Internal Phosphorus (P) Management Program
- Lake Okeechobee Exotic Species Control Program

The Lake Okeechobee and Estuary (LOER) Program was announced by Governor Jeb Bush in 2005. The program consists of a combination of capital projects and numerous interagency initiatives designed to provide measurable and meaningful improvements to water quality and quantity in Lake Okeechobee and the Caloosahatchee and St. Lucie estuaries. The SFWMD, FDEP, and FDACS were charged with implementing the program. The LOER study area and its goals and objectives significantly overlap with the NEEPP, therefore, the two programs are expected to complement and support each other.

Major components of the LOER include:

- Lake Okeechobee Fast Track Projects
- Lake Okeechobee Operating Schedule Revisions
- Lake Okeechobee and Tributary TMDLs
- Mandatory Fertilizer Best Management Practice (BMP) Implementation

The Comprehensive Everglades Restoration Plan (CERP) provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades. CERP was approved by Congress in the Water Resources Development Act (WRDA) of 2000. The goal of CERP is to capture fresh water that now flows unused to the ocean and the gulf and redirect it to areas that need it most. The majority of the water will be devoted to environmental restoration, reviving a dying ecosystem. The remaining water will benefit cities and farmers by enhancing water supplies for the south Florida economy. CERP is being implemented as a joint effort between the federal government and the state of Florida.

The CERP study area includes all of the Lake Okeechobee Watershed. The goals and objectives of the CERP and the NEEPP significantly overlap, therefore the two programs complement and support each other. Within the Lake Okeechobee Watershed, CERP has recommended implementation of the Lake Okeechobee Watershed Project and construction of several Aquifer Storage and Recovery (ASR) wells. In addition, CERP recommendations include implementation of several projects in watersheds adjacent to the Lake Okeechobee Watershed such as the C-43 Reservoir project, the C-44 Reservoir/STA Project, the Everglades Agricultural Area (EAA) Reservoir Project and ASRs.

The Kissimmee River Restoration Project (KRRP) and the Kissimmee River Headwaters Revitalization Project (KRHRP) were authorized by Congress in 1992 under the Water Resources Development Act (WRDA). Together, these large-scale restoration projects are intended to

- reestablish the river-floodplain system's ecological integrity by reconstructing the river's physical form and reestablishing pre-channelization hydrologic characteristics (stage and discharge),
- provide the water storage and regulation schedule modifications needed to approximate the historical flow characteristics of the Kissimmee river system, and

- increase the quantity and quality of shoreline habitat in lakes Kissimmee, Hatchineha, Tiger, and Cypress for the benefit of fish and wildlife."

When completed, the project will have restored over 40 square miles of river/floodplain ecosystem including 43 miles of meandering river channel and 27,000 acres of wetlands. The project is being jointly implemented by the District and the U.S. Army Corps of Engineers.

Water Reservations for the natural environment are intended to set aside water for protecting fish and wildlife, and public health and safety. The reserved water is not to be allocated to consumptive users. Section 601 of the Federal Water Resources Development Act (WRDA) requires that human and natural system water supplies be protected through state law and that no allocation of new water can be made until natural system waters are protected. WRDA also provides for flood protection and protection against losses of existing sources until adequate replacement for urban, tribal, Everglades National Park, fish and wildlife are determined.